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TRANSMITTAL OF APPEAL BRIEF			Docket No. PTK-235
In re Application of: James V. Lovenstein			
Application No. 10/729,045	Filing Date December 5, 2003	Examiner M. L. Ferguson	Group Art Unit 2854
Invention: MAGNETIC PLATE RETENTION			
<b><u>TO THE COMMISSIONER OF PATENTS:</u></b>			
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 _____ Mark L. Beloborodov Attorney Reg. No. : 50,773 GOODWIN PROCTER LLP Exchange Place Boston, Massachusetts 02109 (617) 570-1352		Dated: <u>April 7, 2006</u>	



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		Application Number	10/729,045	
Effective on 12/08/2004. Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).		Filing Date	December 5, 2003	
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27		First Named Inventor	James V. Lovenstein	
		Examiner Name	M. L. Ferguson	
TOTAL AMOUNT OF PAYMENT		Art Unit	2854	
(\$)		500.00	Attorney Docket No.	PTK-235

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	<b>FILING FEES</b>		<b>SEARCH FEES</b>		<b>EXAMINATION FEES</b>		
		<u>Small Entity</u>		<u>Small Entity</u>		<u>Small Entity</u>	
<b>Application Type</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fee (\$)</b>	<b>Fees Paid (\$)</b>
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	
<b>2. EXCESS CLAIM FEES</b>							
						<u>Small Entity</u>	
						<b>Fee (\$)</b>	<b>Fee (\$)</b>
<b>Fee Description</b>							
Each claim over 20 (including Reissues)						50	25
Each independent claim over 3 (including Reissues)						200	100
Multiple dependent claims						360	180
<b>Total Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>	<b>Multiple Dependent Claims</b>		
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<b>Indep. Claims</b>		<b>Extra Claims</b>	<b>Fee (\$)</b>	<b>Fee Paid (\$)</b>			
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Signature		Registration No. (Attorney/Agent)	50,773
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		Date	April 7, 2006

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PATENT  
Attorney Docket No. PTK-235

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

APPELLANTS: Lovenstein *et al.*      CONFIRMATION NO.: 9318  
SERIAL NO.: 10/729,045      GROUP ART UNIT: 2854  
FILING DATE: December 5, 2003      EXAMINER: Ferguson, Marissa L.  
TITLE: MAGNETIC PLATE RETENTION

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**BRIEF ON APPEAL**

This Appeal Brief is submitted in accordance with 37 C.F.R. § 41.37 and in furtherance of the Notice of Appeal filed February 1, 2006, in support of the appeal from the final rejection of claims 1-10 in the above-identified application.

Appellants enclose a check for \$500.00 to cover the fee for filing of this Appeal Brief. Because this Brief is being filed within one month from the date of the Notice of Panel Decision from Pre-Appeal Brief Review, Appellants believe that no extension-of-time or other fee is due. However, please consider this a conditional petition for the proper extension, if one is required, and a conditional authorization to charge any related extension fees or other fees necessary for entry and consideration of this Brief to Appellants' undersigned counsel's deposit account number 07-1700 with reference to docket number PTK-235.

**REAL PARTY IN INTEREST**

The real party in interest is the owner of the present application, Presstek, Inc., pursuant to an assignment recorded in the records of the U.S. Patent and Trademark Office on December 5, 2003, at Reel 014778, beginning at Frame 0449.

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### **RELATED APPEALS AND INTERFERENCES**

There are no other appeals or interferences pending in the above-identified application that will directly affect or will be directly affected by the Board's decision in the present appeal.

### **STATUS OF CLAIMS**

The application as filed contained 10 claims. Pending claims 1-10 have been finally rejected and are the subject of this appeal.

### **STATUS OF AMENDMENTS**

No amendments have been filed subsequent to the final Office action mailed on November 2, 2005.

### **SUMMARY OF CLAIMED SUBJECT MATTER**

In offset lithography, an image is present on a printing plate as a pattern or "image" of ink-accepting (oleophilic) and ink-repellent (oleophobic) surface areas. In a typical sheet-fed offset press system, the imaged plate is mounted to a plate cylinder, where it is inked. The plate is then brought into contact with the compliant surface of a blanket cylinder. The blanket cylinder, in turn, applies the image to paper sheets which are brought into contact with the blanket cylinder by an impression cylinder.<sup>1</sup>

When mounting an imaged plate to a plate cylinder or a blank plate to an imaging cylinder, it is essential that the leading and trailing edges of the plate be secured firmly to the cylinder and that the plate be wrapped tightly around the cylinder. This ensures that there will be no relative movement between the plate and the cylinder when the cylinder is rotated. Likewise, when a donor/acceptor sheet set is mounted to a cylinder for platemaking by thermal transfer, both sheets must be firmly clamped to the plate to avoid relative movement. The clamp must also have a thickness (i.e., a radial extension from the cylinder) less than the focal length of the imaging device in order to avoid contact with the device as the cylinder rotates.<sup>2</sup>

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<sup>1</sup> Specification at paragraph [0002].

<sup>2</sup> Specification at paragraph [0005].

Accordingly, Appellants have invented a device and method that enables rapid, efficient mounting of a recording member, such as a lithographic plate to a plate cylinder for printing. It is equally applicable to securing a lithographic plate to a stand-alone platemaker.<sup>3</sup> In its various embodiments, the claimed invention utilizes one or more magnetic retention devices each having a curved surface complementary to the cylinder. When disposed on the plate, the retention devices magnetically adhere the plate to the underlying cylinder.<sup>4</sup>

Specifically, independent claim 1 relates to a retention device for securing a recording medium to a rotatable cylinder with at least a magnetically susceptible surface. The retention device is configured for releasable attachment to the cylinder over the recording medium and comprises a curved surface complementary to the cylinder curvature. Associated with the surface is at least one magnetic element.<sup>5</sup> Dependent claims 2-5 depend directly from independent claim 1, and contain further limitations thereon.

Independent claim 6 relates to a method for securing a recording medium to a cylinder having at least a magnetically susceptible surface. The method involves providing a retention device comprising a curved surface complementary to the cylinder curvature and, associated with the surface of the retention device, at least one magnetic element. The retention device is positioned proximate to the cylinder, and attraction of the at least one magnetic element for the cylinder causes the retention device to be magnetically attached to the cylinder, thereby securing the recording medium thereto.<sup>6</sup> Dependent claims 7-10 depend directly from independent claim 6, and contain further limitations thereon.

### **GROUND FOR REJECTION TO BE REVIEWED ON APPEAL**

The issues on appeal are whether claims 1-10 are unpatentable under 35 U.S.C. §103(a) over U.S. Patent No. 6,688,227 to Zerillo (hereinafter “Zerillo”) in view of U.S. Patent No. 6,729,235 to Kerr (hereinafter “Kerr”).

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<sup>3</sup> Specification at paragraph [0007]

<sup>4</sup> Specification at paragraph [0008]

<sup>5</sup> Specification at paragraph [0009]

<sup>6</sup> Specification at paragraph [0010]

## ARGUMENT

For the reasons set forth below, Appellants submit that claims 1-10 constitute nonobvious subject matter and are patentable under 35 U.S.C. § 103(a) over Zerillo in view of Kerr. As explained in more detail below, in making her rejections of the independent claims, the Examiner failed to follow the applicable law and relied solely on an incorrect interpretation of Kerr.

I. Zerillo and Kerr, alone or in combination, fail to teaches or suggests a retention device having “a curved surface complementary to a curvature of the cylinder”

It is well established that the Examiner bears the initial burden of presenting a prima facie case of unpatentability. *In re Oetiker*, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). To establish a prima facie case of obviousness, every element of the invention as claimed must be found in the prior art. See *In re Rouffet*, 149 F.3d 1350, 1357 (Fed. Cir. 1998). As a result, a reference, or combination of references, that does not teach or fairly suggest the invention as a whole cannot render that claim obvious. However, merely piecing together elements from the prior art to defeat the patentability of a claimed invention is inappropriate. *Id.* Rather, to establish obviousness, there must be (i) some suggestion, motivation, or teaching of the desirability of making the specific claimed combination found in the prior art references themselves or in the knowledge generally available to one of ordinary skill in the art that lies outside the disclosure of the patent application, and (ii) a reasonable expectation of success. See *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). See also *In re Koztrab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000).

In the present case, the Examiner has failed to find references which, when properly combined, teach the limitations of independent claims 1 and 6. The Examiner, in other words, has not met even the basic requirements of § 103(a).

The primary reference, Zerillo, relied upon by the Examiner, discloses a retention device for securing a recording medium that is releasably attached to a rotatable, magnetically susceptible cylinder.<sup>7</sup> As recognized in the final Office action, Zerillo does not teach or suggest a retention device having “a curved surface complementary to a curvature of the cylinder” claimed by Appellants.

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<sup>7</sup> See Zerillo, column 2, lines 6-13 and 27-52.

For this feature, the Examiner cites Kerr. But Kerr fails to cure the deficiencies of Zerillo, because, like Zerillo, Kerr does not disclose a complementary curved surface of a retainer device. Rather, Kerr discloses a material clamp (50) for holding sheet material (36) to a rotatable drum (28). The material clamp is fixedly held above the surface of the drum, with the sheet material being held against the inner surface of the material clamp by a slide. The slide can extend outwards from the surface of the drum to raise the sheet material from the surface of the drum and hold it against the retaining surface of the material clamp.<sup>8</sup>

Applicants respectfully submit that Kerr is *silent* with respect to the shape of the inner surface the retention device, and, in particular, Kerr nowhere mentions or even suggests a retention device with “*a curved surface complementary to a curvature of the cylinder.*” Instead, Kerr discloses a retainer device (52) and boss (54), which maintains a retaining surface (56, 57) radially outward of an outer surface (38) of an imaging drum (28). Kerr does not even hint at a curved retention surface. Quite the opposite: the retaining surface (56), as shown at least in Figures 3a-8a, 8c, and 9a-11b, and the retaining surfaces (56, 57), as shown together at least in Figures 14 and 15b, are depicted as flat, straight surfaces that ***do not*** follow the curvature of the drum. For example, Figures 14 and 15b show a configuration with both retaining surfaces (56) and (57). In both drawings, the retaining surfaces (56, 57), i.e., the surfaces disposed nearest the drum and used to contact the sheet material, are flat. In Figure 14, the surfaces (56) and (57) define a single horizontal path, while in Figure 15b, the flat surfaces (56) and (57) are angled slightly to the horizontal plane. Neither of these configurations involves a retaining surface with “*a curved surface complementary to a curvature of the cylinder.*” Furthermore, Figures 2a and 12 do not contradict the above-mentioned figures, but merely present a different perspective of the same retention device having a surface that is flat and straight.

Accordingly, even if the cited references were combined, they still would not teach the requirements of Appellants’ claims. Nothing in the cited art teaches or even suggests a retention device with “*a curved surface complementary to a curvature of the cylinder.*”

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<sup>8</sup> See Kerr, column 2, lines 19-64.

## II. The proposed modification of Kerr is improper

The Examiner acknowledged in the final Office Action that neither Kerr nor Zerillo teaches a curved surface complementary to a curvature of the cylinder, yet asserted that Kerr's retainer device "as a whole shows curvature" and, accordingly, one of ordinary skill in the art would be apparently motivated to modify the flat retaining elements of Kerr and then combine Zerillo with the modified teachings of Kerr to arrive at the claimed invention. This reasoning is flawed as a matter of law and relies on an incorrect interpretation of Kerr.

As mentioned above, it is well settled that to modify a reference, there must be (i) some suggestion or motivation to do so in the reference itself or in the knowledge generally available to one of ordinary skill in the art that lies outside the disclosure of the patent application and (ii) a reasonable expectation of success. *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991). It is also well settled that, to establish inherency, the extrinsic evidence "*must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.*" *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). "[Inherency] is quite immaterial if, as the record establishes here, one of ordinary skill in the art would not appreciate or recognize that inherent result." *In re Spormann*, 363 F.2d 444, 150 U.S.P.Q. 449 (C.C.P.A. 1966); *In re Naylor*, 152 U.S.P.Q. 106 (CCPA 1966).

As discussed above, in Figure 15b of Kerr, the flat surfaces (56, 57) are angled slightly to the horizontal plane to enable these surfaces to lay parallel with the flat outer surfaces of the slides (66). Appellants submit that a number of flat surfaces arranged in the manner described in Kerr simply will not produce "a curved surface complementary to a curvature of the cylinder," as required by independent claims 1 and 6. Therefore, even when combined in the retainer device (50), the flat surfaces (56, 57) cannot produce a curved surface.

As a matter of ordinary understanding, a curved surface is "*a surface that deviates from planarity in a smooth, continuous fashion*"<sup>9</sup> and/or has "no part that is a plane surface."<sup>10</sup> The

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<sup>9</sup> The American Heritage® Dictionary of the English Language, 4<sup>th</sup> ed. (2000<http://www.dictionary.com>)

<sup>10</sup> McGraw-Hill Dictionary of Scientific and Technical Terms, 6<sup>th</sup> ed. (2003)



retainer device (50) of Kerr, in contrast, does not define a smooth continuous surface, but rather features a series of discrete flat inner surfaces that merely approximate the general path of the surface of the cylinder to provide flat retaining surfaces parallel with the flat outer surface of the slides (66). As such, the surface-to-surface complementarity required by Appellants' claims, and the contact benefits obtainable as a result, are not achieved.

Even as a matter of logic, equating a series of flat elements arranged along a curve to a fully curved surface makes no sense. A claim to a round peg in a round hole is not anticipated by a square peg in a round hole — even if the square peg is very small and arranged, with other small square pegs, in a circular pattern. Each element of the retainer device of Kerr in and of itself does not conform to a curved surface, and as such the retainer device as a whole therefore cannot be said to define a curved surface.

Indeed, this lack of disclosure of a non-flat surface does not come as a surprise, because, in view of the retaining configuration of Kerr, there is simply no need for the retention surface of Kerr to be curved and “*complementary to a curvature of the cylinder*.” In fact, providing a curved surface for the retention surface may be detrimental to the performance of Kerr's apparatus, as a curved surface would reduce the contact area between a flat outer surface of the radially extendable slide and the inner surface of the material clamp. Curving the surface of Kerr's retention device might then require a complementary curvature of the outer surface of the slide to provide sufficient contact between the surfaces of the retention device and slide in order to better secure the sheet material therebetween.

In view of the arguments above, Appellants submit the Examiner's rejections of claims 1-10 were erroneous, and urge the Board of Patent Appeals and Interferences to reverse all of the Examiner's rejections as to each of these claims.

Respectfully submitted,



Date: April 7, 2006

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## **CLAIMS APPENDIX**

1. A retention device for securing a recording medium to a rotatable, magnetically susceptible cylinder, the retention device being configured for releasable attachment to the cylinder over the recording medium and comprising a curved surface complementary to a curvature of the cylinder and, associated with the surface, at least one magnetic element.
2. The apparatus of claim 1 wherein the retention device comprises a plurality of magnetic elements distributed over the surface.
3. The apparatus of claim 1 wherein the magnetic elements are recessed within the device so as not to protrude beyond the surface.
4. The apparatus of claim 1 wherein the entire surface is magnetic.
5. The apparatus of claim 1 further comprising a removable handle to facilitate application and removal of the retention device.
6. A method for securing a recording medium to a magnetically susceptible cylinder, the method comprising the steps of:
  - a. providing a retention device comprising a curved surface complementary to a curvature of the cylinder and, associated with the surface, at least one magnetic element; and
  - b. positioning the retention device proximate to the cylinder, attraction of the at least one magnetic element for the cylinder causing the retention device to be magnetically attached to the cylinder so as to secure the recording medium thereto.
7. The method of claim 6 wherein the retention device comprises a plurality of magnetic elements distributed over the surface.
8. The method of claim 6 wherein the magnetic elements are recessed within the device so as not to protrude beyond the surface.
9. The method of claim 6 wherein the entire surface is magnetic.
10. The method of claim 6 wherein the positioning step is accomplished using at least one handle portion removably associated with the retention device.

**EVIDENCE APPENDIX**

- (1) Printout of the definition for “curved surface” at <http://www.dictionary.com> (accessed on April 7, 2006)
- (2) McGraw-Hill Dictionary of Scientific and Technical Terms, 6<sup>th</sup> ed., page 529 (2003)



curve

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curve **Pronunciation Key** (kûrv)

n.

- a. A line that deviates from straightness in a smooth, continuous fashion.
- b. A surface that deviates from planarity in a smooth, continuous fashion.
- c. Something characterized by such a line or surface, especially a rounded line or contour of the human body.
2. A relatively smooth bend in a road or other course.
3.
  - a. A line representing data on a graph.
  - b. A trend derived from or as if from such a graph: "Once again, the politicians are behind the curve" (Ted Kennedy).
4. A graphic representation showing the relative performance of individuals as measured against each other, used especially as a method of grading students in which the assignment of grades is based on predetermined proportions of students.
5. Mathematics.
  - a. The graph of a function on a coordinate plane.
  - b. The intersection of two surfaces in three dimensions.
  - c. The graph of the solutions to any equation of two variables.
6. Baseball. A curve ball.
7. Slang. Something that is unexpected or designed to trick or deceive.

v. **curved**, **curv·ing**, **curves**Blue  
collar

v. *intr.*

To move in or take the shape of a curve: *The path curves around the lake.*

v. *tr.*

1. To cause to curve. See Synonyms at bend<sup>1</sup>.
2. Baseball. To pitch a curve ball to.
3. To grade (students, for example) on a curve.

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[From Middle English, *curved*, from Latin *curvus*; see *sker*-<sup>2</sup> in Indo-European Roots. N., sense 6, short for **curve ball**.]

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**curv**·ed·ness *n.*

**curv**·y *adj.*

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## curve

see throw a curve.

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**curve** (kûrv)

*n.*

1. A line or surface that deviates from straightness in a smooth, continuous fashion.
2. Something characterized by such a line or surface, especially a rounded line or contour of the human body.
3. A curved line representing variations in data on a graph.

v. **curved**, **curv-ing**, **curves**

To move in or take the shape of a curve.

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**curve**

n 1: the trace of a point whose direction of motion changes [syn: curved shape] [ant: straight line] 2: a line on a graph representing data 3: a baseball thrown with spin so that its path curves as it approach the batter [syn: curve ball, breaking ball, bender] 4: the property possessed by the curving of a line or surface [syn: curvature] 5: curved segment (of a road or river or railroad track etc.) [syn: bend] v 1: turn sharply; change direction abruptly; "The car cut to the left at the intersection"; "The motorbike veered to the right" [syn: swerve, sheer, trend, veer, slue, slew, cut] 2: extend in curves and turns; "The road winds around the lake" [syn: wind] 3: form an arch or curve; "her back arches"; "her hips curve nicely" [syn: arch, arc] 4: bend or cause to bend; "He crooked his index finger"; "the road curved sharply" [syn: crook] 5: form a curl, curve, or kink; "the cigar smoke curled up at the ceiling" [syn: curl, kink]

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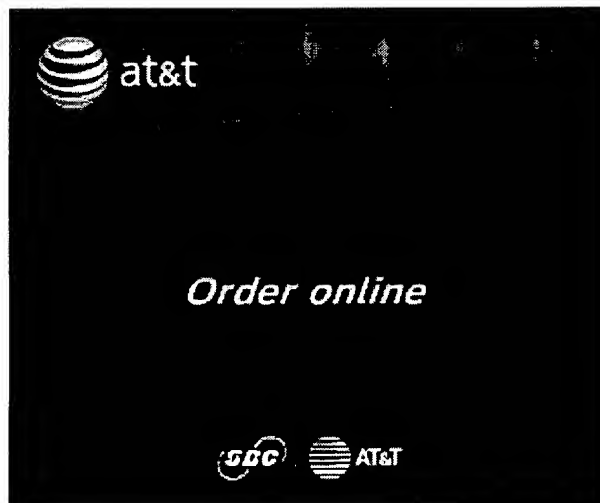
**curve**

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Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Prokaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; U.S. Air Force Glossary of Standardized Terms, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; A DOD Glossary of Mapping, Charting and Geodetic Terms, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology*, White Sands Missile Range, New Mexico, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

### **McGRAW-HILL DICTIONARY OF SCIENTIFIC AND TECHNICAL TERMS, Sixth Edition**

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- curved beam** [ENG] A beam bounded by circular arcs. { 'kərvd 'bēm }
- curved plate** [GRAPHICS] In letterpress printing, pieces of type which have been curved to fit the cylinder of a rotary press. { 'kərvd 'plāt }
- curved space-time** [RELAT] A four-dimensional Riemannian space, in which there are no straight lines but only curves, which is a generalization of the Minkowski universe in the general theory of relativity. { 'kərvd 'spās 'tīm }
- curved surface** [MATH] A surface having no part that is a plane surface. { 'kərvd 'sər-fəs }
- curve fitting** [STAT] The calculation of a curve of some particular character (as a logarithmic curve) that most closely approaches a number of points in a plane. { 'kərv 'fid-ɪŋ }
- curve follower** [COMPUT SCI] A device in which a photoelectric, capacitive or inductive pick-off guided by a servomechanism reads data in the form of a graph, such as a curve drawn on paper with suitable ink. Also known as graph follower. { 'kərv 'fāl-ə-wər }
- curve of constant bearing** See curve of equal bearing. { 'kərv əv 'kən-stənt 'ber-ɪŋ }
- curve of equal bearing** [NAV] On a map plot, a curve connecting all points at which the great-circle bearing of a given point is the same. Also known as curve of constant bearing. { 'kərv əv 'ē-kwəl 'ber-ɪŋ }
- curve of growth** [ASTROPHYS] A graph of the equivalent width of an absorption line versus the number of atoms that produce it. { 'kərv əv 'grōth }
- curve resistance** [MECH] The force opposing the motion of a railway train along a track due to track curvature. { 'kərv rɪ'zɪ's-təns }
- curves of form** [NAV ARCH] Graphs of properties of a vessel's form, such as the displacement and the area of wetted surface, versus the vessel's draft. { 'kərvz əv 'fɔrm }
- curve tracer** [ENG] An instrument that can produce a display of one voltage or current as a function of another voltage or current, with a third voltage or current as a parameter. { 'kərv 'trās-ər }
- curve tracing** [MATH] The method of graphing a function by plotting points and analyzing symmetries, derivatives, and so on. { 'kərv 'trās-ɪŋ }
- curvilinear** [SCITECH] Pertaining to curved lines, as in curvilinear coordinates or curvilinear motion. { 'kərv-ə-lin-ē-ər }
- curvilinear coordinates** [MATH] Any linear coordinates which are not cartesian coordinates; frequently used curvilinear coordinates are polar coordinates and cylindrical coordinates. { 'kərv-ə-lin-ē-ər kō'ɔrd-ən-əts }
- curvilinear motion** [MECH] Motion along a curved path. { 'kərv-ə-lin-ē-ər 'mō-shən }
- curvilinear regression** [STAT] Regression study of jointly distributed random variables where the function measuring their statistical dependence is analyzed in terms of curvilinear coordinates. Also known as nonlinear regression. { 'kərv-ə-lin-ē-ər rɪ'grɛʃ-ən }
- curvilinear solid** [MATH] A solid whose surfaces are not planes. { 'kərv-ə-lin-ē-ər 'səl-əd }
- curvilinear transformation** [MATH] A transformation from one coordinate system to another in which the coordinates in the new system are arbitrary twice-differentiable functions of the coordinates in the old system. { 'kərv-ə-lin-ē-ər tranz-fər'mā-shən }
- curvilinear trend** [STAT] A nonlinear trend which may be expressed as a polynomial or a smooth curve. { 'kərv-ə-lin-ē-ər 'trend }
- cuscutaceae** [BOT] A family of parasitic dicotyledonous plants in the order Polemoniales which lack internal phloem and chlorophyll, have capsular fruit, and are not rooted to the ground at maturity. { kə'skju'tās-ē-ē }
- cusec** [MECH] A unit of volume flow rate, used primarily to describe pumps, equal to a uniform flow of 1 cubic foot in 1 second. Also known as cubic foot per second (cfs). { 'kyū'sek }
- Cushing's syndrome** [MED] A complex of symptoms including facial and truncal obesity, hypertension, edema, and osteoporosis, resulting from oversecretion of adrenocortical hormones. { 'kūsh-ɪŋz 'sɪn'drɒm }
- cushion** [PETRO ENG] A volume of water, drilling fluid, or compressed gas injected into the drill pipe or tubing to control both annular and formation pressures. { 'kūsh-ən }
- cushion effect** See Poisson effect. { 'kūsh-ən i,fekt }
- cushion gas** See blanket gas. { 'kūsh-ən 'gæs }
- cuspid** [ANAT] 1. A pointed or rounded projection on the masticating surface of a tooth. 2. One of the flaps of a heart valve. [ARCH] A pointed projection or peak created by the intersection of two arcs. [GEOL] One of a series of low, crescent-shaped mounds of beach material separated by smoothly curved, shallow troughs spaced at more or less regular intervals along and generally perpendicular to the beach face. Also known as beach cusp. [GEOPHYS] Any of the funnel-shaped regions in the magnetosphere extending from the front magnetopause to the polar ionosphere, and filled with solar wind plasma. [MATH] A singular point of a curve at which the limits of the tangents of the portions of the curve on either side of the point coincide. Also known as spinode. { kəsp }
- cuspidate bar** [GEOL] A crescentic bar joining with the shore at each end. { 'kə'spāt 'bār }
- cuspidate ripple mark** See linguoid ripple mark. { 'kə'spāt 'rɪp-əl 'mɑrk }
- cuspid cap** [ASTRON] One of the 10 bright areas observed near one of the extremities of the illuminated portion of Venus during the crescent phase. { 'kəsp 'kɑp }
- cusped magnetic field** [ELECTROMAG] A magnetic field created by adjacent parallel coils that carry current in opposite directions; used in fusion research, to contain a plasma of high-energy deuterium ions. { 'kəsp't mag'ned-ɪk 'fɛld }
- cuspid** See canine. { 'kəsp-əd }
- cuspidal cubic** [MATH] A cubic curve that has one cusp, one point of inflection, and no node. { 'kəsp-əd-əl 'kyū-bɪk }
- cuspidal locus** [MATH] A curve consisting of the cusps of some family of curves. { 'kəsp-əd-əl 'lō-kəs }
- cuspidate** [BIOL] Having a cusp; terminating in a point. { 'kəsp-əd-ət }
- cusp of the first kind** [MATH] A cusp such that the two portions of the curve adjacent to the cusp lie on opposite sides of the limiting tangent to the curve at the cusp. Also known as simple cusp. { 'kəsp əv ðə 'fɜrst 'kɪnd }
- cusp of the second kind** [MATH] A cusp such that the two portions of the curve adjacent to the cusp lie on the same side of the limiting tangent to the curve at the cusp. { 'kəsp əv ðə 'sek-ənd 'kɪnd }
- custard winds** [METEOROL] Cold easterly winds on the northeastern coast of England. { 'kəs-tərd 'wɪnz }
- custodial area** [BUILD] Area of a building designated for service and custodial personnel; includes rooms, closets, storage, toilets, and lockers. { kə'stōd-ē-əl 'er-ē-ə }
- custom-designed device** [ELECTR] An integrated logic circuit element that is generated by a series of steps resembling photographic development from highly complicated artwork patterns. { 'kəs-təm də'zɪnd dɪ'vɪs }
- customer substation** [ELEC] A distribution substation located on the premises of a larger customer, such as a shopping center, commercial building, or industrial plant. { 'kəs-tə-mər 'səb'stā-shən }
- custom millwork** See architectural millwork. { 'kəs-təm 'mɪl'wɜrk }
- cusum chart** See cumulative sum chart. { 'kyū'səm 'tʃɑrt }
- cut** [BIOCHEM] A double-strand incision in a duplex deoxyribonucleic acid molecule. [CHEM ENG] A fraction obtained by a separation process. [CRYSTAL] A section of a crystal having two parallel major surfaces; cuts are specified by their orientation with respect to the axes of the natural crystal, such as X cut, Y cut, BT cut, and AT cut. [GRAPHICS] A photoengraving used in letterpress printing. [LAP] The style in which a gem is cut, such as brilliant cut, single cut, or rose cut. [MATH] 1. A subset of a given set whose removal from the original set leaves a set that is not connected. 2. See fraction. [MIN ENG] 1. To intersect a vein or a working. 2. To excavate coal. 3. To shear one side of an entry or a crosscut by digging out the coal from floor to roof with a pick. [MOL BIO] A double-strand incision in a duplex deoxyribonucleic acid molecule. [NUCLEO] The fraction that is removed as product or advanced to the next separative element in an isotope separation process. [TEXT] The number of needles per inch in the cylinder or needle bed in a knitting frame. { kət }
- cut-and-carry method** [MET] A die-fabricating method in which the part remains attached to the strip or is forced back



**RELATED PROCEEDINGS APPENDIX**

NONE